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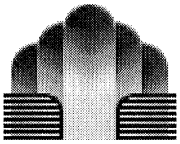

Peter **Wendol kowski**

05/02/2003 11:43 AM

To: Peter Wendolkowski/DC/USEPA/US@EPA
cc:
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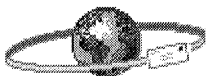
Subject: Environmental Defense comments on Diphenyl Oxide (CAS NO. 10 I-84-8)



Richard_Denison@environmentaldefense.org on 04/30/2003 01:18:52 PM

To: oppt.ncic@epamail.epa.gov, hpv.chemrtk@epamail.epa.gov, Rtk Chem/DC/USEPA/US@EPA, Karen Boswell/DC/USEPA/US@EPA, cldeford@dow.com
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Subject: Environmental Defense comments on Diphenyl Oxide (CAS NO. 101-84-8)

(Submitted via Internet 4/30/03 to oppt.ncic@epa.gov, hpv.chemrtk@epa.gov, boswell.karen@epa.gov, chem.rtk@epa.gov, lucierg@msn.com and cldeford@dow.com)

Environmental Defense appreciates this opportunity to submit comments on the robust summary/test plan for Diphenyl Oxide (CAS NO. 101-84-8).

The test plan and robust summaries for diphenyl oxide (DPO) were prepared jointly by Solutia Inc. and The Dow Chemical Company. DPO is produced by the sponsoring companies and sold to industrial companies in the United States and in other countries for use as a heat transfer fluid (blended with biphenyl). It is also used in the production of flame retardants and surfactants and in other applications. The sponsors contend that there is limited opportunity for occupational or environmental exposures, but this statement is not very convincing in light of the varied and dispersive uses of DPO. It is important to remember that the PCB's were used primarily as heat transfer fluids, yet they caused significant and widespread environmental and human exposures that years after their phaseout remain an extraordinarily difficult environmental health issue.

The sponsors argue that no additional studies are needed to meet the requested SIDS elements. We disagree because of some apparent inconsistencies between the repeat dose and developmental toxicity studies. Specific comments are as follows:

1. The sponsors state in the test plan that bioconcentration data indicate that significant metabolic clearance occurs in rainbow trout, yet in the robust summary it is asserted that there did not appear to be any metabolites of DPO detected in fish tissue and that it is the parent compound (DPO) that is cleared from the fish. Is or is not DPO metabolized in fish, and if it is metabolized are the metabolites known and are they of concern?

2. The melting point of diphenyl oxide is 28 degrees C. Is it an oily substance in warm water, and how would this influence the environmental fate and distribution of DPO?

3. In the repeat dose studies, body weight and weight gain were decreased in the high dose group. The sponsors assert that this was caused by the unpalatability of the test substance. The justification for this statement is inadequate, however, so we must assume that this effect is caused by DPO; hence, we disagree with the sponsors' derivation of a NOEL of 5000 ppm in the diet.

4. The test plan uses "representative studies" in the robust summaries to support a number of statements regarding the adequacy of existing data. While these studies may well be representative, this is not self-evident; we strongly recommend that the sponsors include all of the studies in the robust summaries so that we and other members of the public can determine if the studies included in the robust summaries are, in fact, representative. This approach would also be more consistent with EPA's guidance on preparing Robust summaries (www.epa.gov/chemrtk/robsumgd.htm), which states that "a single 'best' study would contain a weight-of-the-evidence analysis in its remarks section which refers to, and ties together, the other studies."

5. The indicated purity of commercial grade DPO is indicated as 99% in some of the robust summaries and 98% in others. What is the purity of the commercial grade DPO, what are the main impurities and are they of environmental health concern?

6. In the repeat dose study, the sponsors state that the NOEL is 335 mg/kg/day in adult female Sprague Dawley rats. This value contradicts the data provided in the teratogenicity study, in which it is stated that maternal toxicity in the same strain of rats was observed at a lower dose (ZOO mg/kg/day) after a shorter exposure period. Moreover, the teratogenicity study used a heat transfer fluid as the test substance, comprised of 73% DPO and 27% biphenyl, whereas the repeat dose study used commercial-grade DPO. These results indicate that the mixture used in heat transfer fluids possesses toxicological properties not found in commercial-grade DPO.

The sponsors contend that reproductive studies are not needed because the repeat dose and teratogenicity studies that have been conducted provided no indication of reproductive toxicity. Inasmuch as the repeat dose and teratogenicity studies used different test substances, we recommend that the sponsors conduct a reproductive toxicity study on the DPO/biphenyl mixture.

7. We agree that existing data demonstrate that DPO has low acute toxicity and it is not mutagenic.

Thank you for this opportunity to comment.

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